

Distance Between Points on a Coordinate Plane

When two ordered pairs have the same x-coordinate or y-coordinate, they are on the same line.

The distance between these two points can be found by **counting the spaces** between the points.



Points A and B have the same second coordinate. The distance between them is 5 units.

Point A = (-3,3)

Point B = (2,3)

Point C = (-3,4)

Point A is 5 units from Point B. Likewise, B is 5 units from A. We wouldn’t say that they are -5 units away, even though you may move to the left on the number line, because distance is ALWAYS positive. For example, if you traveled 5 blocks to school and forgot your lunch and had to go back for it, you would have traveled another 5 blocks for 10 round trip. In other words, absolute value is always used to calculate distance!

Points A and C have the same first coordinate. The distance between them is 7 units.

You can also use **absolute value** to determine the distance between points!

* Notice Point A = (-3,3) and Point B = (2,3). They have the same y-coordinate, \_\_\_\_\_\_.
* That means you’re finding the distance between the x-coordinates, \_\_\_\_\_ and \_\_\_\_\_.
* -3 is 3 units from the y-axis, or |-3| = \_\_\_\_\_
* 2 is 2 units from the y-axis, or |2| = \_\_\_\_\_
* |-3| + |2| = \_\_\_\_\_\_\_ units

**Example**: (2,9) and (2,3) have the same x-coordinate. **Example**: Area of a triangle = 1/2(b • h).

 The distance between base = dist from A to C =

 them is 6 units. You \_\_\_\_\_\_\_ units

 can figure this out by height= dist from B to C =

 \_\_\_\_\_\_\_ units

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Area of Δ ABC =

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



(1) Count the spaces between the points!

 --- OR ---

(2) Use absolute value to add the different coordinates!

There are 2 WAYS to find the distance between two points…



Distance Between Points

on a Coordinate Plane



**PRACTICE PART 1:**

1) Write the ***ordered pair*** next to each point on the graph 🡪

2) Determine the ***length of each side*** of the rectangle.

 If you have room, you may also label them on the graph.

 = \_\_\_\_\_\_\_\_\_  = \_\_\_\_\_\_\_\_\_

  = \_\_\_\_\_\_\_\_\_  = \_\_\_\_\_\_\_\_\_

3) What is the ***perimeter*** of rectangle ABCD? \_\_\_\_\_\_\_\_\_\_\_\_

4) What is the ***area*** of rectangle ABCD? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5) Determine the length of the triangle’s base and height:  = \_\_\_\_\_\_\_\_\_  = \_\_\_\_\_\_\_\_\_

6) What is the ***area*** of ΔPQR? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



**PRACTICE PART 2:**

Bugs Bunny’s home is located at Point B, (-5, 4).

Yosemite Sam’s home is located at Point Y, (6, 4).

Sylvester’s home is located at Point S, (6, -2).

Daffy Duck’s home is located at Point D, (-5,-2).

7) Plot each character’s home on the graph. 🡪

 Connect them in the order they are listed (also connect

 B & D). Label them B, Y, S, and D, as noted above.

8) What polygon was made? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9) Find the distance from each house (length of sides):

 = \_\_\_\_\_\_\_\_\_  = \_\_\_\_\_\_\_\_\_

  = \_\_\_\_\_\_\_\_\_  = \_\_\_\_\_\_\_\_\_

10) If they march in a parade that begins at Bugs’ house,

 goes around the rectangle, and ends at Bugs’ house,

 how many units did they travel?